

RELATIONSHIP BETWEEN SIX MINUTE WALK TEST, SPIROMETRY AND COPD ASSESSMENT TEST (CAT) SCORES IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS.

ABSTRACT:

BACKGROUND: Spirometric measurement of post bronchodilator FEV₁ is essential for establishing the diagnosis, assessment of severity, to predict the outcome and to assess response to treatment in COPD. Measurement of the walking distance is used to assess functional capacity of patients of COPD. Six minute walk test (6MWT) is a simple, objective, and reproducible test. The facility of spirometry is not available in many rural areas of India because of lack of infrastructure where 6MWT can be done easily. The COPD assessment test (CAT) is a validated test for evaluation of COPD impact on health status. Therefore in this study, we aim to find relationship between Six minute walk test, Spirometry and COPD Assessment Test (CAT) Scores in chronic obstructive pulmonary disease patients.

METHOD: Seventy five patients of COPD were enrolled for the study after applying inclusion and exclusion criteria. The impact of COPD on health status was assessed using CAT score. All patients underwent spirometric measurement of FEV₁, FVC, and ratio of FEV₁ and FVC and test repeated after bronchodilation by 200–400 µg of salbutamol. 6MWT was performed following American Thoracic Society (ATS) protocol of 6MWT and distance was measured in meters.

RESULTS : We found significant linear correlation of 6MWD with post-FEV₁($r=0.561, P<0.001$, post-FVC($r=0.341, P=0.003$), and FEV₁/FVC ($r = 0.476, P < 0 .001$). The mean CAT score was 20.49 ± 5.34 SD. There was a significant association between post- FEV₁ and total CAT score ($P < 0.001$). The correlation between mean post-FEV₁ and mean score of CAT groups 1,2, 3, and 4 was statistically significant ($P < 0.001$).

CONCLUSION: 6MWT can be a useful replacement of spirometry in assessment of severity of COPD. The relationship between CAT score and post-FEV₁ suggests that CAT is linked to severity of airflow limitation and GOLD classification in stable COPD patients. Every time spirometry is not needed to assess the severity of COPD. However Spirometry is necessary to diagnose COPD. CAT score can be used to assess the impact of COPD on health status and quality of life. Both 6MWT and CAT score can be used even in a rural setting where most of the COPD patients have no access to spirometry.

Key words- Chronic obstructive pulmonary disease(COPD), Spirometry, Six minute walk test(6MWT), CAT Score.